# Kendriya Vidyalaya No 1 Dehu Road Pune
## Summer Vacation Homework
### Subject: Informatics Practices (065)
### Chapter 1: Python Pandas I

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**Instructions: Do these questions in your class work notebook and submit in pdf form in your Google Class Room.**

1) Write a program to create a series object using individual characters O, H and P.
2) Write a program to create a series object using a string "so funny"
3) Write a program to create a series object using ndarray that has five elements in the range 24 to 64.
4) Write a program to create a series object using a dictionary that stores the number of students in each section of class 12 in your school
5) Write a program to create a series object that stores the initial budget allocated ( 50,000 each )for the 4 quarter of the year quarter1,quarter2, quarter 3 and quarter 4.
6) Total number of medals to be born is 200 in the inter-University games held every alternate year. Write code to create a series object that stores these medals for games to be held in the decade 2020-2029.
7) A python list namely section stores the section names (A,B,C,D) of class 12th in your school. Another list contri stores the contribution made by these students to a charity fund endorsed by the school. Write code to create a series object that stores the contribution amount as the values and the section name as the indexes.
8) Number of students in class 11th and 12th in three streams (science, commerce and humanities ) are stored into series object to s11 and s12 .write code to find the total number of students in class 11th and 12th stream wise.
9) Create two series object staff and salaries that stores the number of people in various office branches and his salary is distributed in these branches, respectively. Write a program to create another series object that stores average salary per branch and then create a DataFrame object from these series object.
10) I had to add by NGOs for different states:

|  | Toys | books | uniforms | shoes |
|---|---|---|---|---|
| Andhra. | 7916. | 6189. | 610. | 8810 |
| Odisha. | 8508. | 8208. | 508. | 6798 |
| MP. | 7226. | 6149. | 611. | 9611 |
| UP. | 7617. | 6157. | 457. | 6457 |

Write a program to display the aid for i)books and uniform only ii) shoes only.

11) What will be the output of following code-

```
import pandas as pd
s1=pd.Series([1,2,2,7,'Sachin',77.5])
print(s1.head())
print(s1.head(3))
```

12) Write a Pandas program to multiple and divide two Pandas Series.
Sample Series: [2, 4, 8, 10], [1, 3, 7, 9]

13) Write a Pandas program to convert a dictionary to a Pandas series.
Sample dictionary: d1 = {'a': 100, 'b': 200, 'c':300}

14) Write a Pandas program to sort a given
Series. 400, 300.12,100, 200

15) Write a Pandas program to create and display a DataFrame from a specified dictionary data which has the index labels.

Sample Python dictionary data and list labels:

exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],

'score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],

'attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],

'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}

labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']

16) Write a Pandas program to select the specified columns and rows from a given data frame.

Sample Python dictionary data and list labels:

Select 'name' and 'score' columns in rows 1, 3, 5, 6 from the following data frame.

exam_data = {'name': ['Anastasia', 'Dima', 'Katherine', 'James', 'Emily', 'Michael', 'Matthew', 'Laura', 'Kevin', 'Jonas'],

'Score': [12.5, 9, 16.5, np.nan, 9, 20, 14.5, np.nan, 8, 19],

'Attempts': [1, 3, 2, 3, 2, 3, 1, 1, 2, 1],

'qualify': ['yes', 'no', 'yes', 'no', 'no', 'yes', 'yes', 'no', 'no', 'yes']}

labels = ['a', 'b', 'c', 'd', 'e', 'f', 'g', 'h', 'i', 'j']

Expected Output:

Select specific columns and rows:

|   | Score | qualify |
|---|-------|---------|
| b | 9.0 | no |
| d | NaN | no |
| f | 20.0 | yes |
| g | 14.5 | yes |